

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**In re Application of :**

Miyagawa, N. et. al.

**Serial No. :**

09/823,852

**Filed :**

March 29, 2001

**For :**

High Density Analog Recording

**Atty Docket :**

P029 / 03-2454



I hereby certify that this correspondence is being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to:  
Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450,  
on the date below:

Manu Kashyap

12/15/03  
Date

Signature

**CERTIFICATION UNDER 37 C.F.R. 3.73(b)**

**RECEIVED**

DEC 23 2003

Technology Center 2600

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

LSI Logic Corporation, a Delaware corporation, certifies that it is the assignee of the entire right, title and interest in the patent application.

The undersigned has reviewed all the documents in the chain of title of the patent application identified above and, to the best of the undersigned's knowledge and belief, title is in the assignee identified above.

The undersigned (whose title is supplied below) is empowered to act on behalf of the assignee.

I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

LSI Logic Corporation  
1551 McCarthy Blvd., MS D-106  
Milipitas, CA 95035  
(408) 433-7475

Date: 12-15-03

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Sandeep Jaggi".

Sandeep Jaggi  
Chief IP Counsel  
Corporate Assistant Secretary  
LSI LOGIC CORPORATION

## U.S. PATENT ASSIGNMENT

**WHEREAS**, Calimetrics, Inc., a California corporation ("Assignor") owns the patents and patent applications listed and described on Schedule A attached hereto (the "Patents"); and

**WHEREAS**, Assignor and LSI Logic Corporation ("Assignee") have entered into an Asset Purchase Agreement dated November 21, 2003, pursuant to which Assignor has agreed, *inter alia*, to grant to Assignee all of Assignor's right title and interest in and to the Patents and Assignee desires to acquire the entire right, title and interest in and to the Patents.

**NOW, THEREFOR**, in consideration of the foregoing and the sum of One Dollar (\$1.00), and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor does hereby irrevocably sell, assign, convey and transfer unto Assignee, the entire right, title and interest in and to the Patents, including any patents issuing from or based upon all patent applications thereon, and any continuations, continuations-in-part, divisions, reissues or extensions of the foregoing, and including, without limitation, the right to sue for and recover damages for any past, present or future infringement of the foregoing, the same to be held and enjoyed by Assignee for its own use, and for its legal representatives and assigns, to the full end of the term for which patents are granted, as fully and entirely as the same would have been held by Assignor had this assignment and sale not been made.

Assignor agrees to execute, any further papers and to do such other acts as may be necessary and proper, or otherwise required by the Asset Purchase Agreement, to vest full title in and to the Patents in Assignee.

Assignor hereby authorizes and requests the Commissioner of Patents and Trademarks of the United States to record the transfer of the Patents to Assignee.

**IN WITNESS WHEREOF**, Assignor has caused these presents to be duly executed in a manner appropriate thereto as of the 21st day of November 2003.

CALIMETRICS, INC.

By: 

Name: Kenneth C. Campbell

Title: President & CEO

**ACKNOWLEDGMENT**

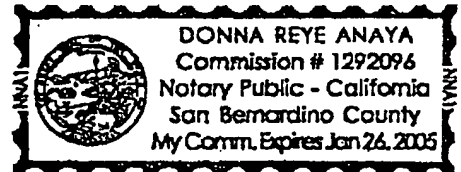
State of California                    )  
  ) ss:  
County of San Bernardino)

On this 20<sup>th</sup> day of November 2003, before me, the undersigned, personally appeared Kenneth C. Campbell, ☐ personally known to me - **OR** - ☒ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/~~she~~/they executed the same in his/~~her~~/their authorized capacity(ies), and that by his/~~her~~/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature: Donna Reye Anaya  
Notary Public

(Seal)



## SCHEDULE A

### U.S. Patents and Patent Applications

#### Issued Patents:

#### Calimetrics Original Issued US Patents (17)

Patent No.	Title	Inventors	Filing Date	Issue Date
5,818,806	Method and Apparatus for Providing Equalization for the Reading of Marks on Optical Data Storage Media	Wong, Spielman	5/6/1997	10/6/1998
5,854,779	Optical Disc Reader for Reading Multiple Levels of Pits on an Optical Disc	Johnson, B; McDermott; O'Neill; Pietrzyk; Spielman; Wong	1/5/1996	12/29/1998
6,115,348	Information Storage Systems Utilizing Media With Optically Differentiated Data Sites	Guerra	12/24/1997	9/5/2000
6,148,428	Method and Apparatus for Modulation Encoding Data for Storage on a Multi-Level Optical Recording Medium	Welch; Wong; McLaughlin	5/21/1998	11/14/2000
6,249,507	Information Storage Systems Utilizing Media With Optically Differentiated Data Sites	Guerra	8/15/2000	6/19/2001
6,269,060	Programmable Write Signal Generator	Harvey; Swuito	9/9/1999	7/31/2001
6,275,458	Method and Apparatus for Reading and Writing A Multi-Level Signal from an Optical Disc	Wong; Spielman; Lee; Martin	2/18/1999	8/14/2001
6,377,529	Method for Providing Improved Equalization for the Reading of Marks on Optical Data-Storage Media	Lee; Ling; Lo; McLaughlin	6/1/2000	4/23/2002
6,381,724	Method and Apparatus for Modulation Encoding Data for Storage on a Multi-Level Optical Recording Medium	Welch; Wong; McLaughlin	8/22/2000	4/30/2002
6,385,255	Coding system and Method for Partial Response Channels	McLaughlin; Lee; Zingman; Fan	8/6/1999	5/7/2002
6,396,789	Data Storage System and Methods Using Diffractive Near-Field Optics	Guerra; Kendra	2/27/1998	5/28/2002
6,504,807	Programmable Write Signal Generator	Harvey; Swuito	6/7/2001	1/7/2003
6,604,219	DC Control of a Multilevel Signal	Lee, Fan, Lo	2/2/2000	8/5/2003
6,608,807	Generating a Multilevel Calibration Sequence for Precompensation	Lee	2/2/2000	8/19/2003
10/302,761	Programmable Write Signal Generator (allowed)	Harvey; Swuito	11/22/2002	
09/910,464	Method and Apparatus for Reading and Writing A Multi-Level Signal from an Optical Disc (allowed)	Wong; Fan; Lee, Ling, Lo, McLaughlin; McPheters, Martin, Powelson; Spielman; Warland, Zingman	7/19/2002	
09/746,748	Optical Disk Initialization Method and Apparatus (allowed)	Guerra; Vezenov	12/22/2000	

# Acquired Issued US Patents (20)

Patent No.	Title	Inventors	Filing Date	Issue Date
5,113,387	THREE LASER OPTICAL DISK DRIVE SYSTEM	Goldsmith, Ziegler	12/12/1989	5/12/1992
5,128,849	OPTICAL DISK STRUCTURES FOR ELECTRON TRAPPING OPTICAL MEMORY MEDIA	Podraczky, Ziegler	12/12/1989	7/7/1992
5,195,082	OPTICAL DISK STRUCTURES FOR ELECTRON TRAPPING OPTICAL MEMORY MEDIA	Revay, Brower, Espin	4/22/1992	3/16/1993
5,537,382	PARTIAL RESPONSE CODING FOR A MULTI-LEVEL OPTICAL RECORDING CHANNEL	McLaughlin, Calderbank, Laroia, Gerpheide	11/22/1994	
5,657,014	M=7(3,7) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	8/12/1997
5,659,310	M=5(0,2) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	8/19/1997
5,659,311	M=6(2,4) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	8/19/1997
5,663,722	M=10(3,6) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	9/2/1997
5,663,723	M=7(1,3) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	9/2/1997
5,668,546	M=6(3,6) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	9/16/1997
5,670,956	M=5(3,7) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	9/23/1997
5,675,330	M=5(4,11) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	10/7/1997
5,680,128	M=6(3,8) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	10/21/1997
5,682,154	M=4(1,2) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	10/28/1997
5,682,155	M=6(4,11) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	10/28/1997
5,748,117	M=8(1,3) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	5/5/1998
5,748,118	M=7(3,8) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	5/5/1998
5,757,293	M=8(1,2) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	5/26/1998
5,781,130	M-ARY (D,K) RUNLENGTH LIMITED CODING FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	7/14/1998
6,150,964	M=10(2,10), D=3.75 RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	8/20/1997	11/21/2000

## Pending Patent Applications:

### Calimetrics Original US Patents Pending (14)

Serial No.	Title	Inventors	Filing Date
09/373,916	High Density Data Write Strategy	O'Neill; Wong; Balasubrama; Bashaw; Learmonth; McDermott; Narayan; Powelson; Warland; Zhou	8/12/1999
09/476,395	Method and Format for Reading and Writing in a Multilevel Optical Disc System	Wong; Lewis; Lee; Ling; Pope; Spielman; Zingman	9/16/2003
09/496,898	Write Compensation for a Multi-Level Data Storage System	Powelson, Warland	2/2/2000
10/171,394	Advanced High Density Data Write Strategy	Balasubramanian, Hieslmair, Narayan, Powelson, Stinebaugh, Warland, Zhou	6/12/2002
09/828,311	Digital Automatic Gain Control of a Multilevel Optical Disc Read Signal	Lo; Lee; Powelson; Spielman	4/6/2001
09/872,486	Synchronization in Multilevel Optical Data Storage	Lee; Spielman; Zingman; Lewis	5/31/2001
10/012,257	Write Compensation for Data Storage and Communication System	Powelson; Warland; Harvey; Lo; Pepin; Spielman; Zhou; Zingman; Lee	11/8/2001
09/823,852	High Density Analog Recording	Miyagawa; Mansunpur	3/29/2001
09/842,214	Method of Fabricating Sub-Micron Hemispherical and Hemicylindrical Structures from Non-Spherically Shaped Templates	Vezenov, Guerra; Wan; Sullivan	4/25/2001
09/842,098	Optical Storage Medium with Virtual Track Pitch	Vezenov; Guerra; Wan; Sullivan; Nelson	4/25/2001
10/057,774	Advanced Forward Error Correction	McLaughlin; Thangaraj	1/22/2002
10/387,232	Secure Data Storage	Wong, Harvey, Lee, Lewis, Spielman, Tan, Warland	3/11/2003
10/455,756	DC Control of a Multilevel Signal	Lee, Fan, Lo	6/5/2003
10/608,890	Generating a Multilevel Calibration Sequence for Precompensation	Lee	6/26/2003